

## REMARKS

Claims 1-73 are pending. Information referred to in the Information Disclosure Statement submitted on November 24, 2000, has not been considered. Claim 6 is rejected under 35 U.S.C. § 112. Claims 1-73 are rejected under 35 U.S.C. § 101. Claims 1, 14, 15, 16, and 21 are rejected under 35 U.S.C. § 102. Claims 2-73 are rejected under 35 U.S.C. § 103. Applicants respectfully traverse these rejections. By this amendment, claim 6 is amended. No new matter has been added.

### Telephone Conversation With Examiner

Applicants' representative thanks Examiner Brown for the telephone conversation conducted on June 30, 2005. Applicants' representative called Examiner Brown to determine the status of the Information Disclosure Statements (IDSs) placed in the file, and specifically the status of the IDS submitted on December 29, 2004. In the instant Office Action, it is stated that the November 24, 2000 IDS submission was not considered because it did not comply with 37 CFR § 1.98(a)(1). However, several IDSs have been submitted subsequent November 24, 2000, concluding with an IDS submission on December 29, 2004, which were in compliance with 37 CFR § 1.98(a)(1). During the conversation, Applicants' representative asked the Examiner what was needed in addition to the IDS submission of December 29, 2004. Upon reviewing the file, the Examiner suggested that all appeared to be in order.

Applicants' representative also explained to Examiner Brown that the rejections, in the instant Office Action, base on 35 U.S.C. §§ 102 and 103 did not point out where in the cited references Examiner thought claim limitations were taught. Applicants' representative stated that it would be difficult to respond to such rejections because Applicants' representative would only be guessing as the nature of ny teachings in the cited references as perceived by the Examiner. Because of the lack of indication as to where claim limitations are taught in the cited references, Applicants' representative explained that he would not be able to respond with arguments overcoming the rejections. Examiner Brown acknowledged Applicants' representative's statements.

**Information Disclosure Statement**

In view of the telephone conversation with the Examiner on June 30, 2005, and Examiner's indication that all IDS submissions are in compliance with 37 CFR § 1.98(a)(1), Applicants request that all Information Disclosure Statement Submissions filed in the application be entered and information referred to therein be considered.

**Claim Rejections - 35 U.S.C. § 112**

Claim 6 is rejected under 35 U.S.C. § 112 because there is insufficient antecedent basis for the limitation: "the retrieval." Claim 6 is hereby amended to correct this typographical error. Accordingly, Applicants request that the rejection of claim 6 under 35 U.S.C. § 112 be reconsidered and withdrawn.

**Claim Rejections - 35 U.S.C. § 101**

Claims 1-73 are rejected under 35 U.S.C. § 101. Claims 1-70 allegedly lack patentable utility and claims 1-73 allegedly identify a set of actions but do not result in a concrete result.

The rejected claims are directed to decrypting data, creating a computer program, and resisting modification or analysis of a computer's actions, which are useful, concrete, and tangible results. To better understand the qualification of subject matter under 35 U.S.C. § 101, a brief development of the law is provided below.

35 U.S.C. § 101 reads:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The Supreme Court has construed § 101 broadly, noting that Congress intended statutory subject matter to "include anything under the sun that is made by man." *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980) (quoting S. Rep. No. 82-1979, at 5 (1952); H.R. Rep. No. 82-1923, at 6 (1952)).

Despite the apparently infinitely broad sweep of 35 U.S.C. § 101, the Supreme Court has held that certain categories of subject matter are not entitled to patent protection. In *Diamond v. Diehr*, 450 U.S. 175, 185 (1981), the Supreme Court explained that there are three categories of subject matter for which one may not obtain patent protection, namely “laws of nature, natural phenomena, and abstract ideas.”

The Supreme Court has also held that certain mathematical subject matter is not, standing alone, entitled to patent protection. *Diehr*, 450 U.S. 175 (1981); *Parker v. Flook*, 437 U.S. 584 (1978); *Gottschalk v. Benson*, 409 U.S. 63, n.19 (1972). In *Diehr*, the Court explained that certain types of mathematical subject matter, standing alone, represent nothing more than abstract ideas until reduced to some type of practical application, *i.e.*, “a useful, concrete and tangible result.” *In re Alappat*, 33 F.3d 1526, 1544 (Fed. Cir. 1994).

A close analysis of *Diehr*, *Flook*, and *Benson* reveals that the Supreme Court never intended to create an overly broad, fourth category of subject matter excluded from § 101. Rather, at the core of the Court's analysis in each of these cases lies an attempt by the Court to explain a rather straightforward concept, namely, that certain types of mathematical subject matter, standing alone, represent nothing more than abstract ideas until reduced to some type of practical application, and thus that subject matter is not, in and of itself, entitled to patent protection. *In re Alappat*, 33 F.3d 1526, 1544 (Fed. Cir. 1994).

Because § 101 includes processes as a category of patentable subject matter, the judicially-defined proscription against patenting of a “mathematical algorithm,” to the extent such a proscription still exists, is *narrowly limited* to mathematical algorithms in the abstract. *State Street v. Signature Fin. Group Inc.*, 149 F.3d 1368, 1374-75 (Fed. Cir. 1998) (emphasis added).

The *Alappat* inquiry simply requires an examination of the contested claims to see if the claimed subject matter as a whole is a disembodied mathematical concept representing nothing more than a “law of nature” or an “abstract idea,” or if the mathematical concept has been reduced to some practical application rendering it “useful.” *In re Alappat*, 33 F.3d 1526, 1544 (Fed. Cir. 1994). The claimed invention as a whole must accomplish a practical

application. That is, it must produce a “useful, concrete and tangible result.” *State Street*, 149 F.3d 1368 at 1373.

To distinguish an abstract concept (*i.e.*, a pure mathematical algorithm) from a statutory subject matter, courts often determine if the claim would wholly preempt others from using the algorithm. For example, in *In re Iwahashi*, 888 F.2d 1370, 1375 (Fed. Cir. 1989), the court stated that the fact that four claimed means elements function to transform one set of data to another through what may be viewed as a series of mathematical calculations does not alone justify a holding that the claim as a whole is directed to nonstatutory subject matter. However, in *Gottschalk v. Benson*, 409 U.S. 63, 68-72 (1972), the Court noted that the claims for converting binary coded decimal numbers to pure binary numbers, as written, were “so abstract and sweeping” that they would “wholly pre-empt” the use of the mathematical formula.

The Supreme Court has supported and enhanced this effort. In *Diehr*, the Court explicitly distinguished *Diehr*'s process by pointing out that “the respondents here do not seek to patent a mathematical formula. Instead, they seek patent protection for a process of curing synthetic rubber.” *Diehr*, 450 U.S. at 187. The Court then explained that although the process used a well-known mathematical equation, the applicants did not “pre-empt the use of that equation.” *Id.* Thus, even though a mathematical algorithm is not patentable in isolation, a process that applies an equation to a new and useful end “is at the very least not barred at the threshold by § 101.” *Id.* at 188.

A numerical result (*i.e.*, a numerical result representing information) may be a useful, concrete, and tangible result. It is important to note that whether the product of the claimed process is numerical is not a criterion of whether the claim is directed to statutory subject matter. *Arrhythmia Research Tech. Inc. v. Corazonix Corp.*, 958 F.2d 1053, 1060 (Fed. Cir. 1992).

In *AT&T Corp. v. Excel Communications Inc.*, 172 F.3d 1352, 1358 (Fed. Cir. 1999), a primary interexchange carrier (PIC) indicator value was derived using a simple mathematical (Boolean) principle. The PIC indicator *represented* information about the call

recipient's PIC, a useful, non-abstract result that facilitates differential billing of long-distance calls made by an interexchange subscriber. *Id.* (emphasis added) The court noted that because the claimed process applies the Boolean principle to produce a useful, concrete, tangible result without pre-empting other uses of the mathematical principle, on its face the claimed process comfortably falls within the scope of § 101. *Id.*

*Diehr* also demands that the focus in any statutory subject matter analysis be on the claim as a whole. Indeed, the Supreme Court stated in *Diehr*: When a claim containing a mathematical formula implements or applies that formula in a structure or process which, when considered as a whole, is performing a function which the patent laws were designed to protect, then the claim satisfies the requirements of § 101. *Diehr*, 450 U.S. at 187.

A “process” no longer requires a physical transformation of something to a different state or thing: transformation of data is sufficient if it produces “a useful, concrete and tangible result.” This reasoning appears intended to be *broadly construed*. *Ex parte Donner*, 53 USPQ2d at 1702 (Board of Patent Appeals and Interferences, 1999) (emphasis added). A “physical transformation” is not an invariable requirement, but merely one example of how a mathematical algorithm may bring about a useful application. *AT&T Corp.*, 172 F.3d at 1358.

As a specific example, in *State Street*, the court held that the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces “a useful, concrete and tangible result”-- a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades. *State Street*, 149 F.3d at 1375.

Office personnel have the burden to establish a prima facie case that the claimed invention as a whole is directed to solely an abstract idea or to manipulation of abstract ideas or does not produce a useful result. Only when the claim is devoid of any limitation to a

practical application in the technological arts should it be rejected under 35 U.S.C. § 101.

*Manual of Patent Examining Procedure* § 2106, Ed. 8, Rev. 2 (May. 2004).

With regard to the independent claims, claim 1 is directed to “a method of creating a computer program that uses a cryptographic algorithm to apply a cryptographic key to first data.” Creating a computer program is a useful, concrete, and tangible result. Applying a cryptographic key to data is also a useful, concrete, and tangible result. Claim 22 is directed to a method of “decrypting data with a cryptographic key.” Claim 32 is directed to a method of “performing an action on a computing device in a manner that is at least partly resistant to modification or analysis.” Claims 45 and 63 are both directed to methods of “creating a computer program that is at least partly resistant to modification or analysis.” Note, there is no articulation in the instant Office Action as to why dependent claims 2-21, 23-31, 33-44, 46-62, and 64-70 lack patentable utility. Decrypting data, creating a computer program, and resisting modification or analysis of a computer’s actions, are all useful, concrete, and tangible results, and do not wholly preempt others from using algorithms utilized therein. The claims are not devoid of any limitation to a practical application in the technological arts. Accordingly, claims 1-73 are directed to patentable subject matter under 35 U.S.C. § 101.

Because the claims are directed to at least decrypting data, creating a computer program, and resisting modification or analysis of a computer’s actions, which are useful, concrete, and tangible results, Applicants respectfully request that the rejection of claims 1-73 under 35 U.S.C. § 101 be reconsidered and withdrawn.

**Claim Rejections - 35 U.S.C. § 102**

Claims 1, 14-16, and 21 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,301,361, issued to Mishenko *et al.* (“Mishenko *et al.*”). In support of the forgoing rejections, it is asserted in the Office Action at page 6, only that Mishenko *et al.* “teaches a program applying a cryptographic algorithm to encrypt apply a key to a first data without access to the cryptographic key, (Abstract) It is inherent that the program is compiled.”

The above-mentioned claims recite various features that appear to have been overlooked. Without an explanation as to how Mishenko *et al.* teaches every feature of claims 1, 14-16, and 21, Applicants are deprived of an opportunity to provide a meaningful response.

“The goal of examination is to clearly articulate any rejection early in the prosecution process so that the applicant has the opportunity to provide evidence of patentability and other wise reply completely at the earliest opportunity.” MPEP 706. “In rejecting claims for want of novelty or for obviousness, the examiner must cite the best references at his or her command. When a reference ... shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable. The pertinence of reference, if not apparent, must be clearly explained and each rejected claim specified.” (emphasis added) 37 § CFR 1.104 (c)(2), MPEP 706. To anticipate a claim, a reference must teach every claimed element. MPEP § 2131 (emphasis added). Furthermore, the examiner bears the burden of proof to show patent invalidity. *See In re Caveney*, 761 F.2d 671, 674 (Fed. Cir. 1985). Such proof must amount to a preponderance of the evidence to warrant rejection of claims. *Id.* Examiner has not met his burden.

An explanation as to how Mishenko *et al.* teaches every feature of claims 1, 14-16, and 21, has not been provided. It is noted that in a previous Office Action response (dated December 29, 2004), for similar reasons, an exemplary list of claim features was provided. The list is repeated herein. The following list is exemplary and not intended to be representative of all features of claims 1, 14-16, and 21.

- “identifying a set of actions that are performed in the course of using [a] cryptographic algorithm to apply [a] cryptographic key” (claim 1)
- “said computer program does not require access to said cryptographic key” (claim 1)
- “encrypting or hashing a portion of the compiled instructions” (claim 16)

Because no explanation has been provided as to how at least the above features read on Mishenko *et al.*, Applicants submit that it has not been demonstrated by a preponderance of the evidence that Mishenko *et al.* teaches each and every element of claims 1, 14-16, and

21, as required in accordance with MPEP § 2131. Further, it is apparent that Mishenko *et al.* shows or describes an invention other than that claimed by the Applicants, and because Examiner has not designated the particular parts of Mishenko *et al.* relied upon as nearly as practicable, as required under 37 § CFR 1.104 (b), Applicants are not provided an opportunity to provide a meaningful response to the rejection of claims 1, 14-16, and 21 under 35 U.S.C. § 102.

Accordingly, Applicants request that Examiner set forth the portions of Mishenko *et al.* that teach all features of claims 1, 14-16, and 21 in a Non-Final Office Action so that Applicants are provided an opportunity to respond to such new grounds for rejection, or alternatively reconsider and withdraw the rejection of claims 1, 14-16, and 21 under 35 U.S.C. § 102.

**Claim Rejections - 35 U.S.C. § 103**

Claims 2-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mishenko *et al.* in various combinations of U.S. Patent No. 5,991,399 (Graunke), U.S. Patent No. 6,715,079 (Maytal), U.S. Patent No. 5,892,899 (Aucsmith), U.S. Patent No. 6,553,494 (Glass), U.S. Patent No. 5,682,428 (Johnson), and U.S. Patent No. 5,912,972, issued to Barton ("Barton").

The arguments and remarks provided above with respect to rejections based on Mishenko *et al.*, under 35 U.S.C. 102 also apply to the rejections of 2-73 rejected under 35 U.S.C. 103. Without an understanding of how Mishenko *et al.* is being used, Applicants are not being provided an opportunity to provide a meaningful response to rejections based on references in combination with Mishenko *et al.* Further, the above mentioned claims recite various features that appear to have been overlooked. For example, many of the features listed in the previous Office Action response (dated December 29, 2004) to the rejections under 35 U.S.C. 103, are not addressed in the instant Office Action.

Inasmuch as claim features have not been considered, Applicants request that an explanation be provided in a subsequent Non Final Office Action as to how these features are



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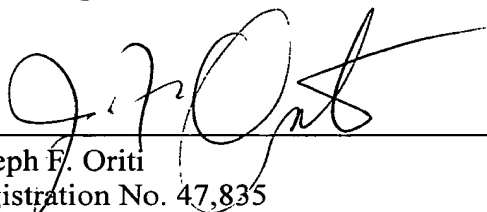
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taught in the combined references, or how the references can be modified to yield these features. Alternatively, Applicants request that the rejection of claims 2-73 under 35 U.S.C. § 103 be reconsidered and withdrawn.

**Conclusion**

In view of the foregoing arguments, remarks, and amendments, it is respectfully submitted that this application is in condition for allowance. Reconsideration of this application and an early Notice of Allowance are respectfully requested. In the event that the Examiner cannot allow this application for any reason, the Examiner is encouraged to contact the undersigned attorney to discuss resolution of any remaining issues.

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Joseph F. Oriti  
Registration No. 47,835

Woodcock Washburn LLP  
One Liberty Place - 46th Floor  
Philadelphia PA 19103  
Telephone: (215) 568-3100  
Facsimile: (215) 568-3439